9/1/05

CERTIFIED AGGREGATE
PRODUCER PROGRAM
PARTIAL AUDIT CHECKLIST

Date _____ Page ___ of ___

Source No. _____ **Q No.** _____

Plant/Redistribution Terminal Name _____

Plant/Redistribution Terminal Location _____

INDOT Audit Team Members

	Name	Position
1.	_____	Geologist
2.	_____	Area Supervisor
3.	_____	Aggregate Technician
4.	_____	_____
5.	_____	_____

Plant/Redistribution Terminal Members

	Name	Position
1.	_____	Certified Agg. Tech.
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

1. GENERAL INSTRUCTIONS

Certified Aggregate Producer Program (CAPP)
Quality Control Plan (QCP)
Certified Aggregate Technician (CAT)

Any square bracket marked by an X on the Audit Checklist requires a Corrective Action Sheet to be prepared. The Corrective Action Sheet will be prepared when a deficiency is found, and a copy given to the Producer by the end of the audit. All other square brackets shall have a check, if the item is satisfactory, or NA if not applicable.

Begin the audit by reviewing the QCP before arriving at the Producer's site. Likewise, checklists prepared during previous audits, especially the last one, will be reviewed. An advance notification of one day will be given to the Producer of a scheduled partial audit. The audit will take place during a normal working day.

The Addenda Summary Sheet and QCP Annex, if applicable, are required to be maintained in the QCP Appendix.

1.1 [ ] Addenda Summary Sheet and QCP Annex reviewed

Source # ___ ___ ___ ___ Page ___ of ___

2. DIARY ITM 211 Reference
10.0
12.5
12.7

Select at random one active production week for review of the diary. The diary shall be in accordance with the following requirements and information.

2.1	[ ]	General weather conditions
2.2	[ ]	Areas of mining operation - ledges or pit area
2.3	[ ]	Materials produced and estimated quantities
2.4	[ ]	Materials sampled and tested
2.5	[ ]	Time samples were obtained and tests completed (may state that all samples obtained were tested the same day)
2.6	[ ]*	Changes in key personnel
2.7	[ ]*	Significant changes in equipment, plant, screens, etc
2.8	[ ]*	Significant events or problems
2.9	[ ]*	Nonconforming trend in 5-point moving average of control chart (7 or more points in a row are above or below target mean, or 7 or more points in a row are increasing or decreasing)
2.10	[ ]	Signature by Certified Aggregate Technician
2.11	[ ]*	Other persons signature -- counter-signed by Certified Aggregate Technician

Any nonconforming normal production or load-out test shall be followed immediately by corrective action. Search control charts for nonconforming tests for the week being reviewed. When some are found, review the diary on the date of each test for notations regarding action taken.

2.12	[ ]	Nonconforming tests are noted in diary
2.13	[ ]	Corrective action was taken
2.14	[ ]*	After second consecutive nonconforming normal production test, notations indicate that the material was isolated
2.15	[ ]*	After second consecutive nonconforming load-out test, notations indicate that shipping from the stockpile was stopped

* Only If Occurs

_____

_____

Source # ___ ___ ___ ___ Page __ of __

3. SAMPLING AND TESTING ITM 211 References

11.0
14.2.6
14.2.7
14.2.8

*The method of recording the quantities of materials **produced** at the Plant per day or time period will be identified in the QCP. Select an active one week period at random from this record. Obtain all production test reports for materials produced during the one week period. Perform calculations as needed and compare the quantities produced against the production test reports, thereby determining the demonstrated frequency of testing. The previous or subsequent weekly record may need to be obtained to verify the frequency of tests.*

3.1 [ ] Start of production frequency is in accordance with QCP, but is not less than once every 1000 t for the first 5000 t (except not required to exceed 2 per day)

3.2 [ ] Normal frequency is in accordance with QCP, but is not less than once every 2000 t (except not required to exceed 2 per day)

*The method of recording the quantities of materials produced at the Plant that are **shipped** per day or time period will be identified in the QCP. Select an active one week period at random from this record. Obtain all load-out test reports for materials shipped during the one week period. Perform calculations as needed and compare the quantities of materials shipped against the load-out test reports, thereby determining the demonstrated frequency of testing. The previous or subsequent weekly record may need to be obtained to verify the frequency of tests.*

3.3 [ ] Load-out frequency is in accordance with QCP, but is not less than once every 8000 t or at least one sample and test performed per month for shipments that exceed 1000 t for each Certified Material

If material is obtained from another Certified Producer and is a Certified Material, then load-out tests are required. If the material is obtained from a Non-Certified Producer or is not a Certified Material, then the start of production, normal production and load-out tests are required. Search the one week period for these materials, if applicable, and verify that the required tests have been conducted.

3.4 [ ] Load-out test conducted for Certified Material from another Producer

3.5 [ ] Start of production, normal production and load-out tests conducted for material that is not Certified and is received from another Producer

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Source # ___ ___ ___ ___ Page __ of __

SAMPLING AND TESTING (continued)

Select randomly one production test report and one load-out test report for any one product and check all calculations performed on the sheets.

3.6 [ ] Calculations on all sheets are correct and rounded to the first decimal place (0.0) (crushed particle content values shall be rounded to the whole number (0))

The Producer shall check coarse aggregates for deleterious materials. Search the production test reports for deleterious test results during the one week period.

3.7 [ ] Start of production and normal production frequency is in accordance with QCP, but is not less than once per week for each size of Certified Material. (no test is required if the weeks production is less than 100 t)

Gravel shall be sampled and tested for the percentage of crushed coarse aggregate particles unless the QCP states otherwise. Search the production test reports for crushed particle test results during the one week period.

3.8 [ ] Start of production and normal production frequency is in accordance with QCP, but is not less than once per week for each size of Certified Material. (no test is required if the weeks production is less than 100 t)

Air-Cooled Blast Furnace Slag, except for use in HMA or PCC, is required to be sampled and tested in accordance with ITM 212. Search the one week period for this material, if applicable, and verify that the required tests have been conducted.

3.9 [ ] Frequency is in accordance with QCP, but is not less than once for each 2000 t stockpile

Steel Furnace Slag shall be sampled and tested for determination of bulk specific gravity when this material is used in SMA mixtures. Select an active month of production of the steel slag and verify the frequency of testing and compliance with the specification requirements.

3.10 [ ] The frequency of testing is in accordance with QCP, but is not less than once every 2000 t.

3.11 [ ] Individual test results are within 0.050 of the target bulk specific gravity

3.12 [ ] The moving average of four consecutive test results is within 0.040 of the target bulk specific gravity

4. MATERIAL

Obtain production and load-out test reports for one critical sieve material for the one week period. Find the corresponding control chart and check for the following.

Product with critical sieve selected was: _____

4.1 [ ] All test dates have points plotted
4.2 [ ] All points are plotted correctly
4.3 [ ] Average of 5 test value points plotted correctly for one randomly selected point within the one-week period
4.4 [ ] Calculations for one selected test are correct

Obtain production and load-out test reports for one material not controlled by a critical sieve for the one week period. Find the corresponding control chart and check for the following:

4.5 [ ] All test dates have points plotted
4.6 [ ] All points are plotted correctly
4.7 [ ] Calculations for one selected test are correct

5. MATERIAL SAMPLES

ITM 211 References
11.0, 14.2.10, 14.2.11, 15.7

The Producer's Certified Technician shall obtain a minimum of one sample of a Standard Specification or Quality Assurance material under production at the site on the day of the audit. If there is no production then the sample(s) shall be obtained from an existing stockpile. The stockpile shall be selected by an INDOT audit team member.

The sample(s) obtained shall be split by the CAT. The INDOT audit team member shall be given the Department's portion of the sample(s) for testing.

Sampling and sample reduction procedures for the sample(s) obtained shall be observed to verify that they comply with the corresponding checklists or as stated in the QCP.

5.1 [ ] Stockpiling procedure is in accordance with QCP
5.2 [ ] Stockpiles are adequately spaced and not contaminated
5.3 [ ]* All stockpiles have signs as indicated in QCP
5.4 [ ] Air-cooled blast furnace slag stockpiles for leachate testing are approximately 2000 t in size
5.5 [ ]* Stockpile map is current and located as indicated in QCP
5.6 [ ] Sampling procedures are correct
5.7 [ ] Sampling reduction procedures are correct

* Only If Occurs

_____

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Source # ___ ___ ___ ___ Page __ of __

MATERIAL SAMPLES (continued)

The following test results will be determined. A copy of all test reports from both the INDOT Technician and the CAT will be attached to the audit checklist. The variation of test results will be shown in the remarks section of the INDOT Technician's report. The allowable variation will be as follows:

Sieve Size	Maximum % Difference
1½ in. thru 3/8 in.	5
No. 4 thru No. 8	3
Minus No. 200 (Decant < 5.0)	0.5
Minus No. 200 (Decant ≥ 5.0)	1.0
Non-Durable, Total Chert	40% of lowest result or 1%, whichever is greater
Crushed Particles	5 (Both one and two face)

5.7 [ ] Gradation is within limits for critical sieve material
5.8 [ ] Gradation is within Specification Limits or QCP identified limits on all sieves for material without a critical sieve
5.9 [ ] Decant is within limits
5.10 [ ] Deleterious is within limits
5.11 [ ]* Crushed particles are within limits

* Gravel Producers and Redistribution Terminal Producers handling gravel materials

6. DOCUMENTS ITM 211 References 2.5

Determine whether the following documents are current and on file at the Producer's site or location indicated in QCP.

6.1 [ ] Summary of Production Quality Test Results Letter
6.2 [ ] AP Aggregate Approval Letter (if applicable)
6.3 [ ] Supplemental Specifications (sections 211, 301, 302, 303, 904 and 917)

* Only if Occurs

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Source # ___ ___ ___ ___ Page __ of __

7. AUDIT CLOSE-OUT

The Audit Close-Out meeting with the Producer will be conducted at the completion of the audit. The results of the audit will be discussed, and all outstanding matters will be completely resolved or deficiencies requiring deadlines will be established. When the INDOT test results of the split samples are complete and results analyzed, an additional meeting with the Producer will be scheduled to review the results.

When all the results from the audit have been accumulated, including Audit Checklist pages, Sampling and Sample Reduction Checklists, INDOT test report, Corrective Action Sheet(s), and other documentation as may be appropriate, the Area Supervisor shall review the documents to verify that they are properly prepared and complete.

Upon completion of the Audit, all documents will be sent to the District Testing Engineer.

_____ _____

Aggregate Technician Date

9/1/03

SAMPLING STOCKPILED AGGREGATES
ITM 207

APPARATUS

[ ] Square-tipped shovel for coarse aggregate sampling
[ ] Fire shovel or sampling tube for fine aggregate sampling. Sampling tube is 3 in. minimum in diameter and 3 ft minimum in length
[ ] Front-end loader

PROCEDURE

Stockpile Construction

[ ] Front-end loader obtains material from stockpile in same manner as loading truck
[ ] When forming a small pile the loader bucket is as low as possible and material is rolled from bucket
[ ] Each bucket of material is taken and dumped in the same manner and placed uniformly over the preceding one
[ ] Sample stockpile is 10 to 15 t

Mixing

[ ] Loader bucket begins mixing at end of oblong pile
[ ] Loader bucket is as low as possible and pushed into the material until front of bucket is past the midpoint
[ ] Loader bucket is then slowly raised and rolled forward
[ ] Mixing procedure is repeated at the opposite end of pile

Sampling

[ ] Sample locations are approximately one-third of the height of the pile
[ ] At least 6 full shovels or sampling tubes of material taken at equal increments around the pile
[ ] When shovel is used, it is inserted full-depth horizontally into the material and raised vertically

NA - Not Applicable
X - Requires Corrective Action
√ - Satisfactory

_____
Acceptance Technician

_____ _____
INDOT Date

Comments _____

9/1/02

SAMPLE REDUCTION
OF
AGGREGATE SAMPLES
AASHTO T 248

APPARATUS

[ ] Sample splitter, open or closed type, with an even number of equal width chutes, but not less than eight (Coarse Aggregate and Mixed Aggregate)
[ ] Sample splitter with an even number of equal width chutes, but not less than twelve (Fine Aggregate)
[ ] Straight-edge scoop, shovel, or trowel; a broom or brush; and a canvas blanket approximately 6 x 8 ft for quartering
[ ] Straight-edge scoop, shovel, or trowel for mixing the aggregate, and either small sampling thief, small scoop, or spoon for miniature stockpile sampling

PROCEDURE

Method A - Mechanical Splitter

[ ]* Minimum width of individual chutes approximately two times larger than largest particles in sample (Coarse Aggregate and Mixed Aggregate)
[ ] Individual chutes 1/2 to 3/4 in. wide (Dry Fine Aggregate)
[ ] Material uniformly distributed from edge to edge
[ ] Material free flowing through chutes into receptacles below

Method B - Quartering

[ ] Sample placed on hard, clean, level surface
[ ] Sample mixed by turning the entire sample over three times
[ ] Sample shoveled into conical pile depositing each shovelful on top of preceding one
[ ] Sample flattened to uniform thickness by pressing down apex with shovel
[ ] Sample diameter approximately four to eight times the thickness
[ ] Sample divided into four equal parts with shovel or trowel
[ ] Two diagonally opposite quarters removed, including all fine material by brush
[ ] Sample remixed and quartered, using above-noted procedure, until desired size obtained

* Exception to AASHTO T 248

AASHTO T 248

Method C - Miniature Stockpile Sample
(Damp Fine Aggregate Only)

[ ] Sample placed on hard, clean, level surface
[ ] Sample mixed by turning entire sample over three times
[ ] Sample shoveled into conical pile by depositing each shovelful on top of preceding one
[ ] Sample flattened to uniform thickness by pressing down apex with shovel (Only if Done)
[ ] Sample obtained by selecting at least five increments of material at random locations from the miniature stockpile with sampling thief, scoop, or spoon

NA - Not Applicable
X - Requires Corrective Action
√ - Satisfactory

_____
Acceptance Technician

_____ _____
INDOT Date

Comments _____

_____

_____

CORRECTIVE ACTION SHEET

SOURCE # ___ ___ ___ ___

DATE _____

ITEM _____

Problem Explanation: _____

_____

_____

_____

_____

_____

_____

Corrective Action To Be Taken Is: _____

_____

_____

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_____

_____

Deadline Date Is: _____

Follow-up **Date** _____

Finding: _____

_____

_____

_____

If NOT corrected, prepare another Corrective Action Sheet.